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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,964	11/18/2003	Xing-Ping Zhou	TAIW 193	4608

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Washington, DC 20005

EXAMINER
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CHU, RANDOLPH I

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/714,964

Applicant(s)

ZHOU ET AL.

Examiner

Randolph Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/14/2006</u>   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 7/14/2006 has been considered by the examiner.

### ***Drawings / Specification / Claim***

2. The drawings/ the specifications / Claim are objected to because they are not corresponding to each other. Figure 5 of the drawings show that "to-be-determined pixels" are replaced when number of surrounding continuous pixels is equal to 5. But, page 4 of the specification discloses a to-be-determined pixel decided as a mostly-be text pixel (step 240) when the number of continuous text pixels exceeds 5 (step 230). And, claim 4 is claiming that determining a mostly-be text pixel is based on a counted number larger than 5. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ancin et al. ("Text Enhancement for Laser Copiers," Proceedings: 1999 International Conference on Image Processing, IEEE Signal Processing Society).

With respect to claim 1, Ancin et al. teaches, labeling text pixels and to-be-determined pixels in said image according to grayscales of image pixels; searching mostly-be text pixels from said to-be-determined pixels, (pages 494-496, 2. Text Enhancement Operations; 2.3 Pixel Labeling) and smoothing said mostly-be text pixels into text pixels; searching edge pixels from the rest of said to-be-determined pixels, and filling said edge pixels; and filling said text pixels (page 496, 2.4 Pixel label post processing).

With respect to claim 2, Ancin et al. teaches, filling the rest of to-be-determined pixels with background pixels (page 496, 2.4 Pixel label post processing).

With respect to claim 3, Ancin et al. teaches, searching mostly-be text pixels from to-be-determined pixels further comprises steps of: fetching surrounding adjacent pixels of a to-be-determined pixel; counting the number of continuous text pixels in said surrounding adjacent pixels; and determining if said to-be-determined pixel is a

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mostly-be text pixel according to said counted number (Fig. 3; page 496, 2.4 Pixel label post processing).

With respect to claim 8, Ancin et al. teaches, filling edge pixels is to fill said edge pixels with text pixels (Fig. 3; page 496, 2.4 Pixel label post processing).

With respect to claim 9, Ancin et al. teaches, filling edge pixels is to fill said edge pixels with background pixels (Fig. 3; page 496, 2.4 Pixel label post processing).

With respect to claim 10, Ancin et al. teaches, filling edge pixels is to fill said edge pixels partially with background pixels and partially with text pixels (Fig. 3; page 496, 2.4 Pixel label post processing).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Ancin et al. ("Text Enhancement for Laser Copiers," Proceedings: 1999 International Conference on Image Processing, IEEE Signal Processing Society).

Ancin et al. teaches all the limitations of claim 3 as applied above from which claim 4 respectively depend.

Ancin et al. does not teach expressly that determining a mostly-be text pixel is based on a counted number larger than 5.

But, Ancin et al. does teach that determining a mostly-be text pixel is based on a counted number equal to 5 (Fig 3).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine mostly-be text pixel when consecutive neighbor pixels are larger than or equal to 5 in the method of Ancin et al.

The suggestion/motivation for doing so would have been that when pixel of interest is surrounded by consecutive similar pixel it can be determined pixel of interest is whether text or not. Further, there is no disclosed criticality of the range of counted number larger than 5 or opposed to any other value.

7. Claims 5, 6 and 7 are rejected under 35 USC 103(a) as being unpatentable over Ancin et al. ("Text Enhancement for Laser Copiers," Proceedings: 1999 International Conference on Image Processing, IEEE Signal Processing Society) in view of Ishiguro (US 2003/0007183).

With respect to claim 5, Ancin et al. teaches all the limitations of claim 1 as applied above from which claim 5 respectively depend.

Ancin et al. also teaches labeling a target pixel according to grayscale of a to-be-determined pixel.

Ancin et al. does not teach expressly that surrounding said target pixel, defining extending lines in 8 directions; fetching grayscale values of multiple continuous pixels adjacent to said target pixel in a line of two opposite directions; determining styles of said multiple continuous adjacent pixels in said two opposite directions according to said grayscales; and deciding if said target pixel is an edge pixel according to said determination

Ishiguro teaches surrounding said target pixel, defining extending lines in 8 directions; fetching grayscale values of multiple continuous pixels adjacent to said target pixel in a line of two opposite directions; determining styles of said multiple continuous adjacent pixels in said two opposite directions according to said grayscales; and deciding if said target pixel is an edge pixel according to multiple surrounding continuous pixels in opposite said determination (figure 14, ref. label 81, para. [0112]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to decide if said target pixel is an edge pixel according to multiple surrounding continuous pixels of opposite direction in the method of Ancin et al.

The suggestion/motivation for doing so would have been that edge can be easily detected by determine continuity of pixel of interest from multiple surrounding pixels.

Therefore, it would have been obvious to combine Ishiguro with Ancin et al. to obtain the invention as specified in claim 5.

With respect to claim 6, Ishiguro teaches deciding a target pixel as an edge pixel is based on having multiple continuous adjacent text pixels in one direction of a line and having multiple continuous adjacent background pixels in opposite direction of said line (Figure 14, ref. label 81, para. [0112]).

With respect to claim 7, Ishiguro teaches fetching multiple continuous adjacent pixels in a line is to fetch two pixels adjacent to said target pixel in each direction of said line (Figure 14, ref. label 81, para. [0112]).

8. Claim 4 is rejected under 35 USC 103(a) as being unpatentable over Ancin et al. ("Text Enhancement for Laser Copiers," Proceedings: 1999 International Conference on Image Processing, IEEE Signal Processing Society).

Ancin et al. teaches all the limitations of claim 3 as applied above from which claim 4 respectively depend.

Ancin et al. does not teach expressly that determining a mostly-be text pixel is based on a counted number larger than 5.

But, Ancin et al. does teach that determining a mostly-be text pixel is based on a counted number equal to 5 (Fig 3).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine mostly-be text pixel when consecutive neighbor pixels are larger than or equal to 5 in the method of Ancin et al.

The suggestion/motivation for doing so would have been that when pixel of interest is surrounded by consecutive similar pixel it can be determined pixel of interest



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is whether text or not. Further, there is no disclosed criticality of the range of counted number larger than 5 or opposed to any other value.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC



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SUPERVISORY PATENT